IN THE CLAIMS:

Please AMEND the claims as follows:

1. (PREVIOUSLY PRESENTED) An optical communication system comprising:

a transmitting station;

an optical transmission line for transmitting a wavelength division multiplexed (WDM) optical signal sent from said transmitting station;

a receiving station for receiving said optical signal outputted from said optical transmission line;

a repeater station provided in said optical transmission line between said transmitting station and said receiving station;

a first pump light source, located in one of said transmitting station, said receiving station, and said repeater station, supplying pump light at a first wavelength to said optical transmission line;

a second pump light source, located in a different one of said transmitting station, said receiving station and said repeater station, supplying pump light at second wavelength, different from the first wavelength, to said optical transmission line, wherein the pump light at the first wavelength and the pump light at the second wavelength cause Raman amplification of said optical signal to occur in different spans of said optical transmission line, and thereby cause the optical signal to be amplified by a combined Raman amplification as the optical signal travels through the different spans, the first and second wavelengths being selected to reduce gain tilt of the combined Raman amplification and thereby provide a substantially flat gain over wavelengths of the optical signal; and

a controller centrally controlling settings of the first and second wavelengths through communication lines to the first and second pump light sources, to reduce the gain tilt, wherein the controller controls the setting of the first and second wavelengths in a repeating, sequential order.

2. (PREVIOUSLY PRESENTED) The optical communication system according to claim 1, wherein

said optical transmission line has a Raman gain as a function of wavelength in which an interval between a minimum value and a maximum value of a wavelength of said pump light coincides with a width of an amplifying wavelength band

when a maximum value first appeared after a Raman gain generated by said pump light starts showing coincides with a center wavelength of the amplifying wavelength band.

3. (PREVIOUSLY PRESENTED) The optical communication system according to claim 1, wherein:

said second wavelength is set so that a maximum value first appeared after a Raman gain generated by said pump light at said second wavelength starts showing substantially coincides with

a local minimum value first appeared after a Raman gain generated by said pump light at said first wavelength starts showing.

4. (PREVIOUSLY PRESENTED) The optical communication system according to claim 1, further comprising:

a shielding part provided in a station opposing said one or said different one of said transmitting station, said receiving station and said repeater station to shield said opposing station from residual pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station.

5. (PREVIOUSLY PRESENTED) The optical communication system according to claim 1, further comprising:

a residual light detector, provided in a station opposing said one or said different one of said transmitting station, said receiving station and said repeater station, detecting optical power of residual pump light supplied by the pump light source in said one or said different one of said transmitting station, said receiving station and said repeater station;

an adjustor, provided in said one or said different one of said transmitting station, said receiving station and said repeater station, adjusting optical power of said pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station so that a detection result from said residual light detector falls within a predetermined fixed range; and

a detection result transmitter, provided in a same station as said residual light detector, transmitting said detection result from said residual light detector to said adjustor.

6. (PREVIOUSLY PRESENTED) The optical communication system according to claim 1, further comprising:

a residual light detector, provided in a station opposing said one or said different one of said transmitting station, said receiving station and said repeater station, detecting optical power of residual pump light of the pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station;

a stopper, provided in said one or said different one of said transmitting station, said receiving station and said repeater station, stopping supply of the pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station when a detection result from said residual light detector is equal to or lower than a predetermined value; and

a detection result transmitter, provided in a same station as said residual light detector, transmitting said detection result from said residual light detector to said stopper.

7. (PREVIOUSLY PRESENTED) The optical communication system according to claim 1, further comprising:

an optical signal detector provided in said one or said different one of said transmitting station, said receiving station and said repeater station, detecting optical power of said optical signal; and

a stopper stopping supply of said pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station when a detection result from said optical signal detector is outside a predetermined fixed range.

8. (PREVIOUSLY PRESENTED) The optical communication system according to claim 1, further comprising:

a reflected light detector provided in said one or said different one of said transmitting station, said receiving station and said repeater station, detecting optical power of reflected pump light of said pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station; and

a stopper stopping supply of said pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station when a detection result from said reflected light detector is equal to or higher than a predetermined value.

9. (PREVIOUSLY PRESENTED) The optical communication system according to claim 8, further comprising superimposing means for superimposing a low frequency on said pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station, and wherein

said stopper detects said low frequency to verify said reflected pump light.

10. (PREVIOUSLY PRESENTED) The optical communication system according to claim 1, further comprising:

a detector provided in said one or said different one of said transmitting station, said

receiving station and said repeater station, detecting optical power of said optical signal amplified by said pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station; and

a stopper provided in said one or said different one of said transmitting station, said receiving station and said repeater station, stopping supply of said pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station when a comparison result between first and second detection results is within a predetermined range, the first detection result being obtained by said detector when pump light having a first optical power is supplied by the pump light source in said one or said different one of said transmitting station, said receiving station and said repeater station , the second detection result being obtained by said detector when a pump light having a second optical power larger than said first optical power is supplied by the pump light source in said one or said different one of said transmitting station, said receiving station and said repeater station.

11. (PREVIOUSLY PRESENTED) An optical communication system comprising:

a transmitting station;

an optical transmission line for transmitting an optical signal sent from said transmitting station;

a receiving station for receiving said optical signal outputted from said optical transmission line;

a repeater station provided in said optical transmission line between said transmitting station and said receiving station;

a first pump light source, located in one of said transmitting station, said receiving station, and said repeater station, supplying pump light at a first wavelength to said optical transmission line, and

a second pump light source, located in a different one of said transmitting station, said receiving station and said repeater station, supplying pump light at a second wavelength, different from the first wavelength, to said optical transmission line, wherein the pump light at the first wavelength and the pump light at the second wavelength cause Raman amplification of said optical signal to occur in different spans of said optical transmission line, and thereby cause the optical signal to be amplified by a combined Raman amplification as the optical signal travels through the different spans, the first and second wavelengths being selected to reduce gain tilt of the combined Raman amplification;

a detector, provided in said one or said different one of said transmitting station, said receiving station and said repeater station, said detector detecting optical power of said optical signal Raman amplified by the pump light supplied by the pump light source located in said one

or said different one of said transmitting station, said receiving station and said repeater station; and

a stopper, provided in said one or said different one of said transmitting station, said receiving station and said repeater station, stopping supply of the pump light supplied by the pump light source located in said one or said different one of said transmitting station, said receiving station and said repeater station, when a comparison result between first and second detection results is within a predetermined range, the first detection result being obtained by said detector when the pump light supplied by the pump light source located in said one or said different one of said transmitting station, said receiving station and said repeater station has a first optical power, the second detection result being obtained by said detector when the pump light supplied by the pump light source located in said one or said different one of said transmitting station, said receiving station and said repeater station has a second optical power larger than said first optical power.

12. (PREVIOUSLY PRESENTED) An optical communication system comprising:

a transmitting station;

an optical transmission line for transmitting an optical signal which has first and second wavelength bands and is sent from said transmitting station;

a receiving station for receiving said optical signal outputted from said optical transmission line;

a repeater station provided in said optical transmission line between said transmitting station and said receiving station;

a first pump light source, located in one of said transmitting station, said receiving station, and said repeater station, supplying pump light at a first wavelength corresponding to the first wavelength band to said optical transmission line, so that Raman amplification of said optical signal occurs in the first wavelength band;

a second pump light source, located in a different one of said transmitting station, said receiving station and said repeater station, supplying pump light at a second wavelength corresponding to the second wavelength band to said optical transmission line, so that Raman amplification of said optical signal occurs in the second wavelength band;

a band detector detecting optical power of said optical signal amplified by said first and second pump lights in said first and second wavelength bands; and

a band adjustor adjusting optical powers of said first and second pump lights according to a detection result from said band detector so as to keep optical power detected in each of said first and second wavelength bands within a predetermined fixed range.

13. (PREVIOUSLY PRESENTED) The optical communication system according to claim 12, wherein:

said first and second wavelength bands are C-band and L-band, respectively; and

said first and second pump lights are at wavelengths of 1440 nm and 1485 nm, respectively.

14. (PREVIOUSLY PRESENTED) The optical communication system according to claim 12, wherein at least one of the first and second pump light sources is a laser light source which oscillates laser lights with wavelengths of 1440 nm, 1450 nm, and 1485 nm, the optical communication system further comprising

a controller controlling said pump light source to output laser light with the wavelength of 1450 nm when only said optical signal having C-band wavelengths is transmitted. laser light with the wavelength of 1485 nm when only said optical signal having L-band wavelengths is transmitted, and laser lights with the wavelengths of 1440 nm and 1485 nm when said optical signal having both C-band and the L-band wavelengths is transmitted.

15. (PREVIOUSLY PRESENTED) The optical communication system according to claim 12, further comprising:

a shield provided in a station opposing said one or different one of said transmitting station, said receiving station and said repeater station to shield said opposing station from residual pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station .

16. (PREVIOUSLY PRESENTED) The optical communication system according to claim 12, further comprising:

a residual light detector provided in a station opposing said one or different one of said transmitting station, said receiving station and said repeater station, detecting optical power of residual pump light from said one or different one of said transmitting station, said receiving station and said repeater station;

an adjustor provided in said one or different one of said transmitting station, said receiving station and said repeater station, adjusting optical power of pump light supplied by the pump light source in said one or different one of said transmitting station, said receiving station and said repeater station so that a detection result from said residual light detector falls within a predetermined fixed range; and

a detection result transmitter transmitting said detection result from said residual light detector to said adjustor.

17. (PREVIOUSLY PRESENTED) The optical communication system according to claim 12, further comprising:

a residual light detector provided in a station opposing to said one or different one of said transmitting station, said receiving station and said repeater station, detecting optical power of residual pump light from said one or different one of said transmitting station, said receiving station and said repeater station;

a stopper stopping supply of pump light from said one or different one of said transmitting station, said receiving station and said repeater station when a detection result from said residual light detector is equal to or lower than a predetermined value; and

a detection result transmitter transmitting said detection result from said residual light detector to said stopper.

18. (PREVIOUSLY PRESENTED) The optical communication system according to claim 12, further comprising:

an optical signal detector provided in said one or different one of said transmitting station, said receiving station and said repeater station, detecting optical power of said optical signal; and

a stopper stopping supply of pump light provided by the pump light source in said one or different one of said transmitting station, said receiving station and said repeater station when a detection result from said optical signal detector is outside a predetermined fixed range.

19. (PREVIOUSLY PRESENTED) The optical communication system according to claim 12, further comprising:

a reflected light detector provided in said one or different one of said transmitting station, said receiving station and said repeater station, detecting optical power of reflected pump light; and

a stopper stopping supply of pump light from said one or different one of said transmitting station, said receiving station and said repeater station when a detection result from said reflected light detector is equal to or higher than a predetermined value.

20. (CURRENTLY AMENDED) A method for supplying pump light used for Raman amplification in an optical transmission line, comprising:

a first step of supplying pump light having a first optical power to said optical transmission line, the first optical power being lower than a power level of normal operation for Raman amplification;

a second step of detecting optical power of light Raman-amplified by said pump light having said first optical power;

a third step of supplying pump light having a second optical power higher than said first optical power and higher than the power level of normal operation for Raman amplification, to said optical transmission line;

a fourth step of detecting optical power of light Raman-amplified by said pump light having said second optical power; and

a fifth step of giving a warning of optical damage ~~about anomaly~~ when a comparison result between detection results of the second step and the fourth step is within a predetermined range.

21. (ORIGINAL) The method according to claim 20, further comprising a step of stopping supply of said pump light when said warning is given.

22. (PREVIOUSLY PRESENTED) A method comprising:

supplying a first pump light to an optical transmission line, the first pump light causing an optical signal having a first wavelength band traveling through the optical transmission line to be Raman amplified;

supplying a second pump light to the optical transmission line, the second pump light causing an optical signal having a second wavelength band traveling through the optical transmission line to be Raman amplified, the second wavelength band not overlapping with the first wavelength band;

detecting optical power of the Raman amplified optical signal having the first wavelength band;

detecting optical power of the Raman amplified optical signal having the second wavelength band; and

maintaining deviation of Raman amplification gain between the first and second wavelength bands within a predetermined deviation range by adjusting a power level of the second pump light so that the detected optical powers both fall within a predetermined fixed range.

23. (CANCELED)

24. (CANCELED)

25. (PREVIOUSLY PRESENTED) The optical communication system according to claim 11, further comprising:

a controller centrally controlling settings of the first and second wavelengths through communication lines to the first and second pump light sources, to reduce the gain tilt.

26. (PREVIOUSLY PRESENTED) An optical communication system comprising:

a first pump light source, located in a repeater station provided along an optical transmission line between a transmitting station and a receiving station, the repeater station amplifying a wavelength division multiplexed (WDM) optical signal traveling through the optical transmission line from the transmitting station to the receiving station, the first pump light source supplying pump light at a first wavelength to the optical transmission line; and

a second pump light source, located in one of the transmitting station and the receiving station, the second pump light source supplying pump light at second wavelength, different from the first wavelength, to the optical transmission line, wherein

the pump light at the first wavelength and the pump light at the second wavelength cause Raman amplification of the optical signal to occur in different spans of the optical transmission line, respectively, to thereby cause the optical signal to be amplified by a combined Raman amplification as the optical signal travels through the different spans, and

the first and second wavelengths are selected to reduce gain tilt of the combined Raman amplification and thereby provide a substantially flat gain over wavelengths of the optical signal.

27. (PREVIOUSLY PRESENTED) The optical communication system according to claim 26, further comprising:

a controller centrally controlling settings of the first and second wavelengths through communication lines to the first and second pump light sources, to reduce the gain tilt.

28. (PREVIOUSLY PRESENTED) The optical communication system according to claim 26, wherein:

the second wavelength is set so that a maximum value first appeared after a Raman gain generated by the pump light at said second wavelength starts showing substantially coincides with a local minimum value first appeared after a Raman gain generated by the pump light at the first wavelength starts showing.

29. (PREVIOUSLY PRESENTED) The optical communication system according to claim 27, wherein:

the second wavelength is set so that a maximum value first appeared after a Raman

gain generated by the pump light at said second wavelength starts showing substantially coincides with a local minimum value first appeared after a Raman gain generated by the pump light at the first wavelength starts showing.

30. (PREVIOUSLY PRESENTED) An optical communication system comprising:

a transmitting station;

an optical transmission line for transmitting an optical signal sent from said transmitting station;

a receiving station for receiving said optical signal outputted from said optical transmission line;

a repeater station provided in said optical transmission line between said transmitting station and said receiving station;

a first pump light source, located in one of said transmitting station, said receiving station, and said repeater station, supplying pump light at a first wavelength to said optical transmission line;

a second pump light source, located in a different one of said transmitting station, said receiving station and said repeater station, supplying pump light at second wavelength, different from the first wavelength, to said optical transmission line, wherein the pump light at the first wavelength and the pump light at the second wavelength cause Raman amplification of said optical signal to occur in different spans of said optical transmission line, and thereby cause the optical signal to be amplified by a combined Raman amplification as the optical signal travels through the different spans, the first and second wavelengths being selected to reduce gain tilt of the combined Raman amplification;

a residual light detector, provided in a station opposing said one or said different one of said transmitting station, said receiving station and said repeater station, detecting optical power of residual pump light supplied by the pump light source in said one or said different one of said transmitting station, said receiving station and said repeater station;

an adjustor, provided in said one or said different one of said transmitting station, said receiving station and said repeater station, adjusting optical power of said pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station so that a detection result from said residual light detector falls within a predetermined fixed range; and

a detection result transmitter, provided in a same station as said residual light detector, transmitting said detection result from said residual light detector to said adjustor.

31. (PREVIOUSLY PRESENTED) An optical communication system comprising:

a transmitting station;

an optical transmission line for transmitting an optical signal sent from said transmitting station;

a receiving station for receiving said optical signal outputted from said optical transmission line;

a repeater station provided in said optical transmission line between said transmitting station and said receiving station;

a first pump light source, located in one of said transmitting station, said receiving station, and said repeater station, supplying pump light at a first wavelength to said optical transmission line;

a second pump light source, located in a different one of said transmitting station, said receiving station and said repeater station, supplying pump light at second wavelength, different from the first wavelength, to said optical transmission line, wherein the pump light at the first wavelength and the pump light at the second wavelength cause Raman amplification of said optical signal to occur in different spans of said optical transmission line, and thereby cause the optical signal to be amplified by a combined Raman amplification as the optical signal travels through the different spans, the first and second wavelengths being selected to reduce gain tilt of the combined Raman amplification;

a residual light detector, provided in a station opposing said one or said different one of said transmitting station, said receiving station and said repeater station, detecting optical power of residual pump light of the pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station;

a stopper, provided in said one or said different one of said transmitting station, said receiving station and said repeater station,, stopping supply of the pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station when a detection result from said residual light detector is equal to or lower than a predetermined value; and

a detection result transmitter, provided in a same station as said residual light detector, transmitting said detection result from said residual light detector to said stopper.

32. (PREVIOUSLY PRESENTED) An optical communication system comprising:

a transmitting station;

an optical transmission line for transmitting an optical signal sent from said transmitting station;

a receiving station for receiving said optical signal outputted from said optical

transmission line;

a repeater station provided in said optical transmission line between said transmitting station and said receiving station;

a first pump light source, located in one of said transmitting station, said receiving station, and said repeater station, supplying pump light at a first wavelength to said optical transmission line;

a second pump light source, located in a different one of said transmitting station, said receiving station and said repeater station, supplying pump light at second wavelength, different from the first wavelength, to said optical transmission line, wherein the pump light at the first wavelength and the pump light at the second wavelength cause Raman amplification of said optical signal to occur in different spans of said optical transmission line, and thereby cause the optical signal to be amplified by a combined Raman amplification as the optical signal travels through the different spans, the first and second wavelengths being selected to reduce gain tilt of the combined Raman amplification;

an optical signal detector provided in said one or said different one of said transmitting station, said receiving station and said repeater station, detecting optical power of said optical signal; and

a stopper stopping supply of said pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station when a detection result from said optical signal detector is outside a predetermined fixed range.

33. (PREVIOUSLY PRESENTED) An optical communication system comprising:

a transmitting station;

an optical transmission line for transmitting an optical signal sent from said transmitting station;

a receiving station for receiving said optical signal outputted from said optical transmission line;

a repeater station provided in said optical transmission line between said transmitting station and said receiving station;

a first pump light source, located in one of said transmitting station, said receiving station, and said repeater station, supplying pump light at a first wavelength to said optical transmission line;

a second pump light source, located in a different one of said transmitting station, said receiving station and said repeater station, supplying pump light at second wavelength, different from the first wavelength, to said optical transmission line, wherein the pump light at the first wavelength and the pump light at the second wavelength cause Raman amplification of said

optical signal to occur in different spans of said optical transmission line, and thereby cause the optical signal to be amplified by a combined Raman amplification as the optical signal travels through the different spans, the first and second wavelengths being selected to reduce gain tilt of the combined Raman amplification;

a reflected light detector provided in said one or said different one of said transmitting station, said receiving station and said repeater station, detecting optical power of reflected pump light of said pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station; and

a stopper stopping supply of said pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station when a detection result from said reflected light detector is equal to or higher than a predetermined value.

34. (PREVIOUSLY PRESENTED) The optical communication system according to claim 33, further comprising superimposing means for superimposing a low frequency on said pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station, and wherein

said stopper detects said low frequency to verify said reflected pump light.

35. (PREVIOUSLY PRESENTED) An optical communication system comprising:

a transmitting station;

an optical transmission line for transmitting an optical signal sent from said transmitting station;

a receiving station for receiving said optical signal outputted from said optical transmission line;

a repeater station provided in said optical transmission line between said transmitting station and said receiving station;

a first pump light source, located in one of said transmitting station, said receiving station, and said repeater station, supplying pump light at a first wavelength to said optical transmission line;

a second pump light source, located in a different one of said transmitting station, said receiving station and said repeater station, supplying pump light at second wavelength, different from the first wavelength, to said optical transmission line, wherein the pump light at the first wavelength and the pump light at the second wavelength cause Raman amplification of said optical signal to occur in different spans of said optical transmission line, and thereby cause the optical signal to be amplified by a combined Raman amplification as the optical signal travels through the different spans, the first and second wavelengths being selected to reduce gain tilt

of the combined Raman amplification;

a detector provided in said one or said different one of said transmitting station, said receiving station and said repeater station, detecting optical power of said optical signal amplified by said pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station; and

a stopper provided in said one or said different one of said transmitting station, said receiving station and said repeater station, stopping supply of said pump light provided by said one or said different one of said transmitting station, said receiving station and said repeater station when a comparison result between first and second detection results is within a predetermined range, the first detection result being obtained by said detector when pump light having a first optical power is supplied by the pump light source in said one or said different one of said transmitting station, said receiving station and said repeater station , the second detection result being obtained by said detector when a pump light having a second optical power larger than said first optical power is supplied by the pump light source in said one or said different one of said transmitting station, said receiving station and said repeater station.